Beam Power Tube

CERAMIC-METAL SEALS
UNIPOTENTIAL CATHODE
CONDUCTION COOLING

COAXIAL-ELECTRODE STRUCTURE
INTEGRAL CONDUCTION CYLINDER
180 WATTS CW INPUT UP TO 1215 Mc

For Use at Frequencies up to 2000 Mc

The 7843 is the same as the 7844 except for the following items:

Heater, for Unipotential Cathode:		
Voltage (AC or DC)*	26.5 ± 10%	volts
Current at heater volts = 26.5.	0.52	amp

* Because the cathode is subjected to considerable back bombardment as the frequency is increased with resultant increase in temperature, the heater voltage should be reduced depending on operating conditions and frequency to prevent overheating the cathode and resultant short life.

CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

	Note	*Min.*	*Max.*	
Heater Current.	1	0.45	0.57	amp
Direct Interelectrode Capacitances:				
Grid No.1 to plate.	2	–	0.065	μμf
Grid No.1 to cathode & heater. . .	2	11.8	15.2	μμf
Plate to cathode & heater	2	–	0.015	μμf
Grid No.1 to grid No.2.	2	15.9	18.9	μμf ←
Grid No.2 to plate.	2	4	5	μμf
Grid No.2 to cathode & heater. . .	2	–	0.4	μμf
Grid-No.1 Voltage	1,3	-6.5	-15	volts
Grid-No.1 Cutoff Voltage.	1,4	–	-30	volts
Grid-No.1 Current	1,5	10	–	ma
Reverse Grid-No.1 Current	1,3	–	-20	μa
Grid-No.2 Current	1,3	-8	+2	ma
Peak Emission Voltage	1,6	–	400	volts
Interelectrode Leakage Resistance .	7	1	–	megohm
Useful Power Output	8	80	–	watts

Note 1: With 26.5 volts ac or dc on heater.

Note 2: Measured with special shield adapter.

Note 3: With dc plate voltage of 1000 volts, dc grid-No.2 voltage of 300 volts, and dc grid-No.1 voltage adjusted to give a dc plate current of 115 ma.

Note 4: With dc plate voltage of 1000 volts, dc grid-No.2 voltage of 250 volts, and dc grid-No.1 voltage adjusted to give a dc plate current of 1 ma.

Note 5: With plate and grid-No.2 floating and dc grid-No.1 voltage of +2 volts.

Note 6: For conditions with: grid No.1, grid No.2, and plate tied together; and pulse-voltage source connected between plate and cathode. Pulse duration is 2 microseconds, pulse-repetition frequency is 60 pps, and duty factor is 0.00012. The voltage-pulse amplitude is adjusted until a peak cathode current of 10 amperes is obtained. After 1 minute at this value, the voltage-pulse amplitude will not exceed 400 volts (peak).

Note 7: Under conditions with tube at 20° to 30° C for at least 30 minutes without any voltages applied to the tube. The minimum resistance between any two adjacent electrodes as measured with a 200-volt Megger-type ohmmeter having an internal impedance of 1 megohm, will be 1 megohm.

← Indicates a change.

Note 8: In a single-tube, grid-driven, coaxial-cavity class-C-amplifier circuit at 400 Mc and for conditions with 24 volts ac or dc on heater, dc plate voltage of 100 volts, dc grid-No.2 voltage of 300 volts, grid-No.1 resistor adjustable between 1000 and 10,000 ohms, dc plate current of 180 ma. maximum, dc grid-No.1 current of 20 ma. maximum, and driver power output of 3 watts.